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DATE MAILED: 10/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/981,231

Applicant(s)

PLATT, STEVE ANDERSON

Examiner

Joseph Waks

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 and 39-74 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-8, 11-14, 20-23, 34-37, 46-49 and 58-70 is/are allowed.
- 6) ☐ Claim(s) 9, 10, 15-19, 24-28, 45, 50-57, 72-74 is/are rejected.
- 7) ☒ Claim(s) 29-33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 9, 10, 15, 17-19, 24, 26, 57 and 71** are rejected under 35 U.S.C. 102(b) as being anticipated by **Abe (US 4,311,434)**.

Abe discloses invention as claimed: a tower 1, a vertical elevator including track 1a, a carriage 6, 12, a pivot ring in a form of a roller bearing 17, a winch 13, a cable 14 and a pulley (Re Figure 3), a plurality of air foils 5, and a wind power electric power generator (Re column 1, lines 5-10) wherein the wind powered generator can be removably placed within the carriage after the tower has been erected and lifted vertically with the carriage to position the wind powered generator at a top of the tower, and wherein the wind powered generator can be removed from within the carriage after the carriage has been lowered (Re column 2, lines 21, 30).

Re claims 10 and 19, **Abe** discloses the track including a first side guide having a first vertical strip 1a and a second side guide having a second vertical strip 1a and the carriage

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including a first side groove configured to accept the first vertical strip and a second side groove configured to accept the second vertical strip.

3. **Claims 18, 19** are also rejected under 35 U.S.C. 102(e) as being anticipated by **Willis et al. (US 6,278,198)**.

Willis et al. disclose a wind powered electrical generation system including a tower 12 with a vertical elevator, the vertical elevator having a track 26 and a carriage 32 configured to move along the track; and a wind powered generator 26 configured to be connected to the carriage, the wind powered generator including a plurality of airfoils and an electric generator (Re column 3, lines 60-65), wherein the wind powered generator can be removably placed within the carriage after the tower has been erected and lifted vertically with the carriage to position the wind powered generator at a top of the tower, and wherein the wind powered generator can be removed from within the carriage after the carriage has been lowered.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 16, and 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Abe (US 4,311,434)** in view of **Douthit (US 6,239,507)**.

Abe discloses the tower essentially as claimed. However, **Abe** does not disclose the carriage including the plurality of contacts contacting the rotating portion of the wind power generator.

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Douthit discloses a carriage 16 rotatably supporting a wind powered generator 10 and having a plurality of contacts 130, 132 contacting the rotating portion of the generator 140, 142 for the purpose of transferring the current from the generator to an external storage or transmission means while allowing unlimited and free rotation of the generation above a vertical axis.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the tower as taught by **Abe** and to provide the carriage including the plurality of contacts contacting the rotating portion of the wind power generator as taught by **Douthit** for the purpose of transferring the current from the generator to an external storage or transmission means while allowing unlimited and free rotation of the generation above a vertical axis.

6. **Claims 27 and 28** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Abe** (US 4,311,434) in view of **Baraes** (US 4,374,631).

Abe discloses the tower essentially as claimed. However, **Abe** does not disclose a rod rotating within a housing and at least two spars connected to, and radially extending from the rod and each having an airfoil connected thereon.

Baraes discloses the wind powered generator (Re column 3, lines 25-27) having a rotating rod (Re column 3, lines 23 and 24), spars 6 connected to, and radially extending from the rod each having an airfoil 5 connected thereon, wherein the airfoils are configured to pivot about the spars and to slide longitudinally along the spars, the airfoils are biased towards a first end of the spars connected to the rod, each spar includes a cam member 10 adjacent a second end of the spar opposite to the rod, each airfoil includes a cam surface 9 configured to engage the cam

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member on the spar, the cam member and the cam surface are configured to engage to thereby rotate the airfoils relative to the spars as the airfoils move along the spars towards the second end of the spars, for the purpose of providing a speed limiting system to assure reliable operation during adverse weather conditions.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the tower as taught by **Abe** and to provide the rotating rod and the spars connected to, and radially extending from the rod, each having an airfoil connected thereon, wherein the airfoils are configured to pivot about the spars and to slide longitudinally along the spars, the airfoils are biased towards a first end of the spars connected to the rod, each spar includes a cam member adjacent a second end of the spar opposite to the rod, each airfoil includes a cam surface configured to engage the cam member on the spar, the cam member and the cam surface are configured to engage to thereby rotate the airfoils relative to the spars as the airfoils move along the spars towards the second end of the spars, for the purpose of providing a speed limiting system to assure reliable operation during adverse weather conditions.

7. **Claims 39, 41-45, 50, 52, and 54-56** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Salter (US 4,110,631)** in view of **Abe (US 4,311,434)**.

Salter discloses wind powered generator comprising a rod configured to rotate within a housing, at least six spars 21 connected to the rod and extending radially therefrom; an airfoil 22 connected to each of the spars at a location distal the rod wherein the spars and the rod rotate as wind passes the airfoils, thereby powering the generator. However, **Salter** does not disclose the housing and the generator located upwind of the spars and interconnected to the rod.

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Abe discloses the well known in the art wind turbine generator system having a housing 2 located upwind the blades 5(Re column 4, lines 1-5).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the wind powered generator as taught by **Salter** and to provide the well known in the art configuration with the generator housing located upwind the rotor as taught by **Abe** for the purpose of approving the generator cooling, since applicant did not disclose that such configuration solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with upwind or downwind configuration.

8. **Claim 51** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Salter (US 4,110,631)** in view of **Abe (US 4,311,434)** as applied to claim 44 above and further in view of **Douthit (US 6,239,507)**.

The combined system discloses the tower essentially as claimed. However, it does not disclose the carriage including the plurality of contacts contacting the rotating portion of the wind power generator.

Douthit discloses a carriage 16 rotatably supporting a wind powered generator 10 and having a plurality of contacts 130, 132 contacting the rotating portion of the generator 140, 142 for the purpose of transferring the current from the generator to an external storage or transmission means while allowing unlimited and free rotation of the generation above a vertical axis.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined tower and to provide the carriage including the plurality of contacts contacting the rotating portion of the wind power generator as taught by

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Douthit for the purpose of transferring the current from the generator to an external storage or transmission means while allowing unlimited and free rotation of the generation above a vertical axis.

9. **Claim 53** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Salter (US 4,110,631)** in view of **Abe (US 4,311,434)** as applied to claim 44 above and further in view of **Baraes (US 4,374,631)**.

The combination discloses the tower essentially as claimed. However, it does not disclose a rod rotating within a housing and at least two spars connected to, and radially extending from the rod and each having an airfoil connected thereon.

Baraes discloses the wind powered generator (Re column 3, lines 25-27) having a rotating rod (Re column 3, lines 23 and 24), spars 6 connected to, and radially extending from the rod each having an airfoil 5 connected thereon, wherein the airfoils are configured to pivot about the spars and to slide longitudinally along the spars, the airfoils are biased towards a first end of the spars connected to the rod, each spar includes a cam member 10 adjacent a second end of the spar opposite to the rod; each airfoil includes a cam surface 9 configured to engage the cam member on the spar, the cam member and the cam surface are configured to engage to thereby rotate the airfoils relative to the spars as the airfoils move along the spars towards the second end of the spars, for the purpose of providing a speed limiting system to assure reliable operation during adverse weather conditions.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined tower and to provide the rotating rod and the spars connected to, and radially extending from the rod, each having an airfoil connected thereon

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rotating rod and the spars connected to, and radially extending from the rod, each having an airfoil connected thereon, wherein the airfoils are configured to pivot about the spars and to slide longitudinally along the spars, the airfoils are biased towards a first end of the spars connected to the rod, each spar includes a cam member adjacent a second end of the spar opposite to the rod, each airfoil includes a cam surface configured to engage the cam member on the spar, the cam member and the cam surface are configured to engage to thereby rotate the airfoils relative to the spars as the airfoils move along the spars towards the second end of the spars, for the purpose of providing a speed limiting system to assure reliable operation during adverse weather conditions.

10. **Claim 57** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Abe (US 4,311,434)** in view of **Fergusson (US 5,244,346)**.

Abe discloses a tower 1 having three vertical columns connected with braces, a fully assembled elevator to raise and lower a wind powered generator 2, 4, 5. However, **Abe** does not disclose the tower comprising a lower tower section and an upper tower section having the third column converging to the first and second columns.

Fergusson discloses in Figures 6 and 7 a portable wind machine having a portable tower comprising a lower tower section 223 and an upper tower section 225 for the purpose of providing a self containing system that is easy to transport and to install at site without the need of providing an additional crane or other hauling means.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined tower and to provide the tower comprising the lower tower section and the upper tower section as taught by **Douthit** for the purpose of providing a

self containing system that is easy to transport and to install at site without the need of providing an additional crane or other hauling means.

11. **Claims 72-74** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Abe (US 4,311,434)** in view of **Baraes (US 4,374,631)**.

Abe discloses the tower essentially as claimed. However, **Abe** does not disclose a rod rotating within a housing and at least two spars connected to, and radially extending from the rod and each having an airfoil connected thereon.

Baraes discloses the wind powered generator (Re column 3, lines 25-27) having a rotating rod (Re column 3, lines 23 and 24), spars 6 connected to, and radially extending from the rod each having an airfoil 5 connected thereon, wherein the airfoils are configured to pivot about the spars and to slide longitudinally along the spars, the airfoils are biased towards a first end of the spars connected to the rod, each spar includes a cam member 10 adjacent a second end of the spar opposite to the rod, each airfoil includes a cam surface 9 configured to engage the cam member on the spar, the cam member and the cam surface are configured to engage to thereby rotate the airfoils relative to the spars as the airfoils move along the spars towards the second end of the spars, for the purpose of providing a speed limiting system to assure reliable operation during adverse weather conditions.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the tower as taught by **Abe** and to provide the rotating rod and the spars connected to, and radially extending from the rod, each having an airfoil connected thereon, wherein the airfoils are configured to pivot about the spars and to slide longitudinally along the spars, the airfoils are biased towards a first end of the spars connected to the rod, each

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spar includes a cam member adjacent a second end of the spar opposite to the rod, each airfoil includes a cam surface configured to engage the cam member on the spar, the cam member and the cam surface are configured to engage to thereby rotate the airfoils relative to the spars as the airfoils move along the spars towards the second end of the spars, for the purpose of providing a speed limiting system to assure reliable operation during adverse weather conditions.

Allowable Subject Matter

12. **Claims 1-8, 11-14, 20-23, 34-37, 46-49, and 58-70** are allowed.

Re claims **1-8, 11-14, 20-23, and 58-70**, the feature of the upper tower section including a first upper column, a second upper column and a third upper column, with the first upper column and the second upper column being substantially parallel and the third upper column converging towards the first upper column and the second upper column, in combination with the other limitations present, are neither disclosed nor taught by the prior art of record.

Re claims 34-37 and 40, the feature of the entire airfoil on each spar being configured to pivot about the spars and to slide longitudinally along the spars, in combination with the other limitations present, are neither disclosed nor taught by the prior art of record.

13. **Claims 29-33** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Re claims 29-33, the feature of the wind powered generator including a vertical leg configured to be placed within the carriage and rotate relative to the carriage when the wind powered generator is placed within the carriage, in combination with the other limitations present, are neither disclosed nor taught by the prior art of record.

Response to Arguments

14. Applicant's arguments filed on August 4, 2004 have been fully considered but they are not persuasive.

Regarding claims 9 and 19, Abe (US 4,311,434) shows in Figure 4 the carriage including the support 6 and the mount 12 that comprises the pivot ring 17. Applicant's allegation that the Abe only discloses two spaced apart bearings 17 is respectfully traversed by examiner since Abe discloses in column 3, lines 26-27 "a thrust bearing 17" i.e. one bearing. Therefore, the carriage includes the pivot ring as claimed. Regarding the circular shape of the ring examiner directs applicant's attention to column 3 lines 36-47 where Abe describes that the support 6 rotates relatively to the base 9 above the pivot 10 on the thrust bearing 17. One of ordinary skill in the art will appreciate that the bearing must be in a form of circle to allow such rotation.

Examiner agrees with the applicant that they are bearings that are not circular. However, the single bearing 17 shown in Figure 2 with an upper and lower racer (clearly recognizable by one of ordinary skill in the art) allowing the rotation of the support 6 above the pivot 10 must be circular to function as described. Therefore, Abe discloses the feature of the ring as claimed.

Moreover, the support rings in form of cylinder (Re element 13 in US Patent 5,213,470 to Lindquist cited by examiner) or yaw bearing (Re element 22 in US Patent 5,178,518 to Carter et al. also cited by examiner) are well known in the art.

Regarding the carriage 12 missing the grooves, examiner directs applicant's attention to Figure 3 where Abe shows carriage 12 having protrusions (not numbered), slidably surrounding guides or strips 1a. Such a structure inherently includes grooves to accept the strips.

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Applicant's arguments regarding claim 10 are respectfully traversed since Figure 3 clearly shows that the carriage accommodates the guide strips within the projection i.e. the projection inherently must be provided with indentation or groove to accommodate the strips.

Regarding claims 16 and 25.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In this particular case Abe teaches invention essentially as claimed with exception to the carriage including the plurality of contacts contacting the rotating portion of the wind power generator.

Douthit teaches the method of transferring the current from the generator to an external storage or transmission means while allowing unlimited and free rotation of the generation above a vertical axis utilizing the well known in the art of rotary connector structures.

In combination Abe and Douthit teach the invention as claimed. The detailed design of such system is a design choice that requires only routine skills in the art.

Regarding possibility of rising and lowering the nacelle furnished with a rotary connector, examiner submits that one of ordinary skill in the art would be able to design the wiring connecting the stationary ring with the outside supply after installing the nacelle on the top of the tower or to disconnect the wiring from nacelle while lowering it down. The motivation for including the rotary connector disclosed by Douthit is provided by examiner in the rejection above and its function and purpose will be obvious to one of ordinary skill in the art. Moreover,

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the use of cables and electrical connectors to carry the power generated within the nacelle down the tower and away to its destination is well known in the art (Re column 1, lines 22-26 in US 6,213,721 reference cited in this Office action.

Regarding claims 16 and 25 the combined structure includes the plurality of contacts indicated by Douthit as wipers 130 and 132.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, Douthit teaches the method of transferring the current from the generator to an external storage or transmission means while allowing unlimited and free rotation of the generation above a vertical axis utilizing the well known in the art of rotary connector structures. In combination Abe and Douthit teach the invention as claimed. Moreover, use of rotary connectors for carrying the current from rotating and stationary bodies is well known in the art and in particular in wind power systems with yaw actuators. To use the teachings of rotary connector does not require to adopt the whole base for the contemplated system, the idea of transferring the current from rotary to stationary body will be fairly sufficient to adopt the same for a wind turbine tower.

Regarding claim 18, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies

(i.e., the removal of the generator without disassembling the carriage structure or any part of it) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Therefore, removing the generator from carriage with the base 9, or separating the generator from the carriage all together, like by removing the shaft 8 clearly meets the claim limitation reciting “the wind powered generator can be removed from within the carriage after the carriage has been lowered”. Abe discloses in column 1, line 11 the electrical generator that inherently will be accommodated in or enclosed by the nacelle.

Regarding Willis et al., examiner directs applicant’s attention to Figure 7 clearly showing the generator 16 being removed from carriage 32 lowered to the bottom of the tower 12.

Regarding claim 39, all the features except the upwind location of the generator are addressed in the rejection of claims 39, 41-45, 50, 52, and 54-56 and show by Salter in Figures 1-3. Applicant’s arguments regarding these features fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. Applicant’s argument regarding the placing a generator upwind the rotor causing reduction of performance of the impeller blades is respectfully traversed by examiner since the upstream or downstream location of the generator 16 has no impact on the wind flow through the blades and the generator that is driven by the drum 15 via shaft 17 may be operated exactly the same way at the upstream or downstream location and it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Prior Art

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Waks whose telephone number is (571) 272-2037. The examiner can normally be reached on Monday through Thursday 8 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful Darren E Schuberg can be reached on (571) 272-2044. The fax phone numbers for the organization where this

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application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1850.



Joseph Waks
Primary Examiner
Art Unit 2834

October 4, 2004